

BEST AVAILABLE COPYIn the Claims:

1. (Currently Amended) A metal-insulator-metal (MIM) capacitor plate, comprising:
a first conductive layer[~~(.)~~] having a first surface and a thickness of between about 2500 Å to 3000 Å the first conductive layer comprising a first material;
at least one thin conductive material layer having a first surface and a second surface, and a thickness of between about 50 Å and 450 Å disposed over the first conductive layer, such that said second surface of said at least one thin conductive layer is in direct contact, including electrical contact, with the first surface of said first conductive layer, the thin conductive material layer comprising a second material, the second material being different than the first material;
and
at least one second conductive layer having a second surface and a thickness of between about 500 Å and 3000 Å disposed over at least one of the at least one thin conductive material layers, such that said second surface of said at least one second conductive layer is in direct contact, including electrical contact, with the first surface of said at least one thin conductive layer, wherein each of the first conductive layer, the at least one thin conductive layer and the at least one second conductive layer are electrically coupled together to form said MIM capacitor plate and are each patterned to have outer edges that are aligned relative to one another.
2. (Original) The MIM capacitor plate according to Claim 1, wherein the at least one thin conductive material layer comprises TiN, TaN, or WN.
3. (Canceled)

4. (Currently Amended) A metal-insulator-metal (MIM) capacitor plate, comprising:
a first conductive layer, the first conductive layer comprising a first material and having a first surface and a thickness of between about 2500 Å and 3000 Å;

at least one thin conductive material having a first surface and a second surface and a thickness of between about 500 Å and 450 Å layer disposed over the first conductive layer, such that said second surface is in direct contact, including electrical contact, with the first surface of said first conductive layer, the thin conductive material layer comprising a second material, the second material being different than the first material, wherein the at least one thin conductive material layer comprises a first barrier layer disposed over the first conductive layer; and a conductive layer disposed over the first barrier layer; and

at least one second conductive layer having a second surface and a thickness of about 500 Å and 3000 Å disposed over at least one of the at least one thin conductive material layers, such that said second surface of said at least one second conductive layer is in direct contact, including electrical contact, with the first surface of said at least one thin conductive layer.

5. (Original) The MIM capacitor plate according to Claim 4, wherein the first barrier layer comprises Ti, Ta or W, and wherein the conductive layer comprises TiN, TaN, or WN.

6. (Original) The MIM capacitor plate according to Claim 4, wherein the at least one thin conductive material layer further comprises a second barrier layer disposed over the conductive layer.

7. (Original) The MIM capacitor plate according to Claim 6, wherein the first barrier layer comprises Ti, Ta or W, wherein the conductive layer comprises TiN, TaN, or WN, and wherein the second barrier layer comprises Ti, Ta or W.

8. (Currently Amended) A metal-insulator-metal (MIM) capacitor plate, comprising:

a first conductive layer, the first conductive layer comprising a first material and having a first surface and a thickness of about 2500 Å to 3000 Å;

at least one thin conductive material layer having a first surface and a second surface and a thickness of between about 50 Å and 450 Å disposed over the first conductive layer, such that said second surface is in direct physical contact, including electrical contact, with the first surface of said first conductive layer, the thin conductive material layer comprising a second material, the second material being different than the first material; and

at least one second conductive layer having a second surface and a thickness of between about 500 Å and 3000 Å disposed over at least one of the at least one thin conductive material layers, such that said second surface of said at least one second conductive layer is in direct physical contact including electrical contact with the first surface of said at least one thin conductive materials, and wherein the at least one second conductive layer comprises the first material and such that said first conductive layer, said at least one thin conductive layer and said at least one second conductive layer comprises said MIM capacitor plate.

9. (Original) The MIM capacitor plate according to Claim 1, wherein the first conductive layer and the at least one second conductive layer comprise Al.

10. (Original) The MIM capacitor plate according to Claim 1, wherein the MIM capacitor plate is formed in a metallization layer of a semiconductor device, the metallization layer comprising a plurality of conductive lines having a first thickness, wherein the MIM capacitor plate comprises the first thickness.

11. (Original) The MIM capacitor plate according to Claim 1, wherein the MIM capacitor plate comprises a bottom plate of a MIM capacitor.

12. (Original) The MIM capacitor plate according to Claim 1, wherein the MIM capacitor plate comprises a top plate of a MIM capacitor.

13. (Currently Amended) A metal-insulator-metal (MIM) capacitor, comprising:
- a first plate;
 - a dielectric material disposed over the first plate; and
 - a second plate disposed over the dielectric material, wherein one of the first plate and
- [[or]] the second plate comprises:

a first conductive layer, the first conductive layer having a first surface and a thickness of between about 2500 Å and 3000 Å, and comprising a first material;

at least one thin conductive material layer having a first and a second surface and a thickness of between about 50 Å and 450 Å disposed over the first conductive layer, such that said second surface of said at least one thin conductive layer is in direct physical contact, including electrical contact with the first surface of said first conductive layer, the at least one thin conductive material layer comprising a second material, the second material being different than the first material; and

at least one second conductive layer having a second surface and a thickness of about 500 Å and 3000 Å disposed over at least one of the at least one thin conductive material layers, such that said second surface of said at least one second conductive layer is in direct physical contact, including electrical contact, with the first surface of said at least one thin conductive layer, wherein each of the first conductive layer, the at least one thin conductive layer and the at least one second conductive layer are electrically coupled together to form said MIM capacitor plate and are each patterned to include outer edges that are aligned relative to one another.

14. (Currently Amended) The MIM capacitor according to Claim 13, wherein either the first plate ~~or second or second~~ plate is formed in a metallization layer of a semiconductor device, the metallization layer comprising a plurality of conductive lines having a first thickness, wherein the MIM capacitor first plate or second plate comprises the first thickness.

15. (Original) The MIM capacitor according to Claim 13, wherein the at least one thin conductive material layer comprises TiN, TaN, or WN.

16. (Canceled)

17. (Original) The MIM capacitor according to Claim 13, wherein the at least one thin conductive material layer comprises:

a first barrier layer disposed over the first conductive layer; and

a conductive layer disposed over the first barrier layer.

18. (Original) The MIM capacitor according to Claim 17, wherein the first barrier layer comprises Ti, Ta or W, and wherein the conductive layer comprises TiN, TaN, or WN.

19. (Original) The MIM capacitor according to Claim 17, wherein the at least one thin conductive material layer further comprises a second barrier layer disposed over the conductive layer.

20. (Original) The MIM capacitor according to Claim 19, wherein the first barrier layer comprises Ti, Ta or W, wherein the conductive layer comprises TiN, TaN, or WN, and wherein the second barrier layer comprises Ti, Ta or W.

21. (Original) The MIM capacitor according to Claim 13, wherein the first conductive layer and the at least one second conductive layer comprise the same material.

22. (Original) The MIM capacitor according to Claim 13, wherein the first conductive layer and the at least one second conductive layer comprise Al.

23. (Currently Amended) The MIM capacitor according to Claim 13, wherein the other one of the first plate and second plate comprises:

~~a first conductive layer, the first conductive layer comprising a first material;~~

~~at least one first thin conductive material layer disposed over the first conductive layer,~~

~~the at least one first thin conductive material layer comprising a second material, the second material being different than the first material; and~~

~~at least one second conductive layer disposed over at least one of the at least one thin conductive material layers;~~

~~and wherein the second plate comprises:~~

~~a third conductive layer disposed over the dielectric material, the third conductive layer comprising a third material;~~

~~at least one second thin conductive material layer disposed over the third conductive layer, the at least one second thin conductive material layer comprising a fourth material, the fourth material being different than the third material; and~~

~~at least one fourth conductive layer disposed over at least one of the at least one second thin conductive material layers.~~

24. (Currently Amended) The MIM capacitor according to Claim 23, wherein the first conductive layer, the at least one second conductive layer, the third conductive layer and the at least one fourth conductive layer comprise Al, and wherein the at least one first thin conductive material layer and the at least one second thin conductive material layer is comprised ~~comprise~~ ~~about 450 Angstroms or less of~~ TiN, TaN, or WN.

25. (Original) The MIM capacitor according to Claim 24, wherein the at least one first thin conductive material layer and the at least one second thin conductive material layer further comprise a barrier layer disposed over or under the TiN, TaN or WN.

26.-40. (Canceled)

41. (Previously Presented) The MIM capacitor plate according to Claim 8, wherein the first material comprises aluminum.

42. (Previously Presented) The MIM capacitor plate according to Claim 41, wherein the second material is selected from the group consisting of TiN, TaN and WN.

43. (Currently Amended) A metal-insulator-metal (MIM) capacitor comprising:

a first conductive plate comprising a first layer of aluminum having a top surface and a second layer of aluminum having a bottom surface separated by a layer of conductive material having a bottom surface and a top surface, said top surface of said first layer of aluminum in direct physical contact with the bottom surface of said layer of conductive material and said top surface of said layer of conductive material in direct physical contact with said bottom surface of said second layer of aluminum, the conductive material comprising TiN, TaN or WN;

a capacitor dielectric adjacent the first conductive plate; and

a second conductive plate adjacent the capacitor dielectric, wherein the first conductive plate, the capacitor dielectric and the second conductive plate form a capacitor.

44. (Previously Presented) The MIM capacitor of claim 43, wherein the first conductive plate overlies the capacitor dielectric and wherein the capacitor dielectric overlies the second conductive plate.

45. (Previously Presented) The MIM capacitor of claim 43, wherein the second conductive plate overlies the capacitor dielectric and wherein the capacitor dielectric overlies the first conductive plate.

46. (Previously Presented) The MIM capacitor of claim 43, wherein the first conductive plate is formed within a metallization layer, the metallization layer further including a plurality of conductive lines, wherein the first conductive plate and the plurality of conductive lines each have a common thickness.

47. (Previously Presented) The MIM capacitor of claim 43, wherein the layer of conductive material has a thickness of less than about 450Å.

48. (Previously Presented) The MIM capacitor of claim 43, wherein the second conductive plate comprises a first layer of aluminum and a second layer of aluminum separated by a layer of conductive material, the conductive material comprising TiN, TaN or WN.

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